Amendment to

Traffic Impact Study

St. Croix Meadows Racing Park
Proposed Casino
Hudson, Wisconsin

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INTRODUCTION

This report amends the Traffic Impact Study, St. Croix Meadows Racing Park, Proposed Casino, Hudson, Wisconsin (July 2000), prepared by BRW, Inc. (BRW). The Traffic Impact Study prepared by BRW will be referred to in this report as the original BRW study.

The original BRW study is being amended as result of comments and information received during the comment period for the Environmental Assessment (EA) Report for the St. Croix Meadows Racing Park, Proposed Casino, Hudson, Wisconsin. The main change to the original BRW study is the Year 2020 forecast traffic data. The Year 2020 weekday PM peak hour traffic volumes were revised to include traffic expected to be generated by development in the Stageline Road area. These revised traffic volumes had an impact on the capacity analysis results, which changed the conclusion regarding the traffic mitigation measures needed in the future.

EXISTING CONDITIONS

Some of the EA comments indicated a concern about traffic conditions on CTH F and CTH FF south of the proposed casino site. Average daily traffic (ADT) data was obtained from the St. Croix County Highway Department. Traffic counts completed in 1997 indicated that the ADT on CTH F between Mayer Road and CTH FF was 8,300, that the ADT on CTH F between CTH FF and Covey Road was 4,100, and that the ADT on CTH FF between CTH F and SH 35 was 2,800.

The original BRW study indicated that it is expected that the proposed casino would likely attract persons from the Minneapolis/St. Paul metropolitan area and that most casino patrons would utilize I-94 and Carmichael Road to access the site. Therefore, the key intersections selected for the traffic analysis were the four existing signalized intersections along Carmichael Road from I-94 to the casino site. These key intersection are:

- Carmichael Road / Westbound I-94 Ramps
- Carmichael Road / Eastbound I-94 Ramps
- Carmichael Road / Crestview Drive (Stage Line Drive)
- Carmichael Road / Center Drive

Limiting the traffic analysis to these four intersections still appears to be valid. The anticipated directional distribution of casino generated traffic (see Figure 3 in the original BRW study) indicates only a small percentage (4% or less) of casino traffic on roadways other than Carmichael Road or I-94. This small amount of casino traffic will not change the level of service (LOS) or significantly impact these other roads, such as CTH F, CTH FF, Mayer Road, or Tower Road.

Also, the Traffic Report in the 8/28/00 comments from the City of Hudson and prepared by HDR Engineering, Inc. (This report will be referred to as the HDR study in this report.) examined nine intersections in the subject area, including the four "key" intersections. For 2005 traffic conditions with the casino in place, all the intersections operate at LOS D or better and the non-

key intersections were expected to operate at LOS A or B. With the non-key intersections operating at such high levels of service with the casino in place, this implies that the traffic analysis can be limited to the four chosen key intersections. If traffic problems are going to develop in the future, it is likely that they will first show up at these four key intersections.

TRIP GENERATION

Both the HDR study and SRF study (see 7/20/00 Traffic Study prepared by SRF for Environmental Resource Group, LLC) are in agreement with the weekday PM peak hour traffic generation volumes used in the original BRW study. Since it is the peak hour volumes that are used in the capacity analysis, this means the casino-generated traffic used in the capacity analyses is still valid.

Both the HDR study and SRF study suggest that the average daily traffic (ADT) generated by the casino should be higher than that indicated in the original BRW study; the original BRW study uses an ADT of 10,814 for the casino-generated traffic. HDR and SRF come to this conclusion by selectively using trip generation data they obtained from studies they had performed at other casinos. BRW disagrees with this conclusion based on the following:

There is little available published data on traffic generation for casinos. BRW used information from regional casinos and developed a range of trip rates based on various criteria, such as building square footage, slot machines, and gaming positions (see Trip Generation section in original BRW study). For the study, BRW then used the ADT from the rate that gave the highest number, 10,814. The rate that gave this highest number happened to be the ADT per slot machine.

Using its data, HDR indicated that it found a higher ADT rate per slot machine than was used by BRW, and that this new rate gives a higher expected ADT for the proposed Hudson Casino. What this approach fails to consider is if the ADT rate per slot machine is the proper rate to use for casinos. It appears the casinos used by HDR have a higher percentage of non-slot machine gaming positions (20% or more non-slot machine gaming positions) than what is proposed for the Hudson Casino (approximately 7% non-slot machine gaming positions). The non-slot machine gaming positions add to the total traffic generated by the casino, and using HDR's slot machine ADT rate for the Hudson Casino is likely overestimating the ADT.

The SRF study claims that it found a different (7%) peak hour percentage than was used in the BRW study (8.6%), and applies this to the peak hour traffic to come up with a higher ADT. SRF does not provide any documentation of its casino studies so it is difficult to verify its findings.

A better approach that could be taken by HDR and SRF is to share its casino generation information with an organization such as the Institute of Transportation Engineers (ITE), which compiles and publishes trip generation rates. By sharing their information with ITE, they could add to the knowledge base for everyone.

Another way of checking the reasonableness of the estimated 10,814 ADT for the proposed casino is to examine the estimated patrons and employees and assuming a vehicle trip rate for these groups. The 9/18/00 letter from Arthur Andersen to Fred Havenick indicates that it is estimated that there will be 35,664 average weekly patron trips to the casino. This translates into an average daily patron trip figure of 5,095. There are expected to be a total of 1,100 employees working at the proposed casino. Assuming two patrons per vehicle, 1.1 employees per vehicle, and two trips per vehicle results in an ADT of 7,095 [(5095/2 + 1100/1.1)x 2 = 7095]. It should be noted that observations of inbound traffic during the PM peak period on 10/9/00 at the main entrance to the Mystic Lake Casino indicated an average vehicle occupancy of 2.0 person per vehicle.

It appears the ADT of 10,814 is reasonable, and probably conservative, for expected daily traffic at the proposed casino.

TRIP DISTRIBUTION

As indicated in the original BRW study, St. Croix Meadows provided BRW with a list of ZIP codes of racetrack patrons who have been issued "Player's Premium" cards. It was assumed that the proposed casino would attract persons from similar areas as the existing racetrack and that "Player's Premium" cardholders were representative of all likely casino visitors. Appendix A of the Amendment to the Traffic Impact Study contains the list of addresses for the "Player's Premium" cardholders. There are 1308 cardholder addresses.

The cardholder addresses were grouped into zones, and each zone was assigned a principal route to/from the casino. Some judgement was used in determining each principal route, but the main basis for selection was the quickest, most direct route to the casino. The number of cardholders on each route was compared to the total number of cardholders to determine a percentage. This percentage was used as the forecast directional distribution for the casino-generated traffic and is how Figure 3 in the original BRW study was derived.

The assignment of the estimated casino-generated traffic to the four key intersections for the weekday PM peak hour is shown in Figure 1.

FUTURE TRAFFIC GENERATION BY OTHER DEVELOPMENTS

In the original BRW study, future traffic generated by other developments in the area was accounted for by assuming an annual traffic growth rate of 2.1% per year. This assumption is modified in the Amendment to the Traffic Impact Study to account for traffic expected to be generated by developments in the Stageline Road area. The Stageline Road area is bounded on the north by I-94, on the east by SH 35, on the south by Tower Road and on the west by Carmichael Road.

BRW obtained from Bonestroo, Rosene, Anderlik & Associates two memorandums sent to the City of Hudson concerning traffic analyses for the Stageline Road area. These memorandums,

one dated 6/7/99 and the other dated 8/25/99, are included in Appendix B of this Amendment. BRW also had discussions with the City of Hudson planner to determine the type and amount of development likely to occur in the Stageline Road area by the Year 2020. Based on these discussions, the two Bonestroo memorandums, and some judgement by experienced BRW planners, the anticipated new land uses for the Stageline Road area were determined for the Year 2020 and estimated traffic volumes by traffic analysis zone (TAZ) were developed.

Table 1 shows the estimated traffic volumes by TAZ for the Year 2020 for the new developments in the Stageline Road area, and Figure 2 shows how the Stageline Road traffic was assigned to the four key intersections. Except for TAZ 208, 213, and 214, the estimated traffic volumes are the same as those shown in the 6/7/99 Bonestroo memorandum. In TAZ 208, 125,000 SF of office was substituted for the hotel, restaurants, and theater, since it is unlikely that these commercial uses would locate in a zone that is a considerable distance from an access point to I-94 or SH 35. The retail uses in TAZ 213 and 214 were dropped and 100,000 SF of office added, since the 8/25/99 Bonestroo memorandum implies that the City is uncertain about what will go in here and since it is questionable that such a high amount of retail could be supported at this location.

It appears the Stageline Road area will generate a major portion of the expected traffic growth along the Carmichael Road corridor. To account for traffic growth from other developments, an annual traffic growth factor of 1% per year was applied to existing traffic to determine Year 2020 traffic volumes without the Stageline Road development and without the proposed casino. Figure 3 shows the Year 2020 estimated weekday PM peak hour traffic volumes for the four key intersections without the Stageline Road development and without the proposed casino.

In order to determine the incremental traffic impact of the proposed casino, two scenarios should be examined, the No Build scenario and the With Casino scenario. Figure 4 shows the Year 2020 estimated traffic volumes for the four key intersections for the No Build scenario; these volumes include the 1% annual growth factor and the Stageline Road development traffic. Figure 5 shows the Year 2020 estimated traffic volumes for the four key intersections for the With Casino scenario; these volumes combine the volumes from Figures 1 and 4.

The traffic volumes for the I-94 ramps from Figure 5 were compared to the Year 2020 With Casino volumes from the original BRW study. It was found that the Figure 5 ramp volumes were equal to or less than the volumes from the original BRW study. Since the original BRW study indicted LOS C or better operation for the I-94 ramp merge/diverge areas, the revised volumes will produce the same or better results. Therefore, no further analysis of the I-94 ramp merge/diverge operations has been undertaken in this Amendment.

CAPACITY ANALYSIS—FUTURE CONDITIONS

From the original BRW study, there is sufficient roadway capacity at the four key intersections in the Year 2001 to handle the anticipated casino traffic without any significant change to levels of service. The EA comments do not appear to dispute this. From the EA comments, the main concern appears to be what impact the casino-generated traffic will have under future conditions,

when other new developments have been completed in this area. It also appears that it is the weekday PM peak hour that will result in the worst traffic conditions at the key intersections. Therefore, this Amendment will focus on the Year 2020 weekday PM peak hour traffic conditions for its capacity analysis.

As was done in the original BRW study, SYNCHRO computer software was used to perform the capacity analysis for the four key intersections. The capacity analysis for the No Build scenario used the traffic volumes from Figure 4, and the capacity analysis for the With Casino scenario used the traffic volumes from Figure 5. The results of the capacity analysis are as follows:

- At the Carmichael Road/WB I-94 Ramps intersection, the intersection operates at LOS B under the No Build scenario and LOS C under the With Casino scenario.
- At the Carmichael Road/EB I-94 Ramps intersection, the intersection operates at LOS A under the No Build scenario and LOS B under the With Casino scenario.
- At the Carmichael Road/ Crestview Drive intersection, the intersection operates at LOS D under the No Build scenario and LOS E under the With Casino scenario.
- At the Carmichael Road/Center Drive intersection, the intersection operates at LOS A under both scenarios.

Even though the No Build scenario showed the overall intersection LOS to be D for the Carmichael Road/Crestview Drive intersection, two of the movements were expected to operate at LOS F. These movements are the EB Crestview Drive left turn and the SB Carmichael Road left turn. Possible mitigation measures were examined, and it was found that, by adding a second left turn lane to the SB Carmichael Road approach and by converting an existing thru/right lane to a right turn only lane and adding a second right turn only lane to the WB Crestview Drive (Stageline Road) approach, you could eliminate the LOS F operation for the two critical movements. (Note the addition of the right turn lanes to the WB approach allows signal green time to be transferred from the EB/WB thru/right movement to the EB left turn movement.) With these mitigation measures, the Carmichael Road/Cestview Drive intersection is expected to operate at LOS C.

The With Casino scenario indicates that all the intersections, except the Carmichael Road/Crestview Drive intersection, are expected to operate at acceptable levels of service for 2020 conditions. If the mitigation measures for the No Build scenario are installed, this will allow the Carmichael Road/Crestview Drive intersection to operate at LOS D (without any movements at LOS F) for 2020 conditions.

Table 2 shows the results of the capacity analysis for Year 2020 condition for the revised traffic volumes (that include the Stageline Road development traffic) and for the revised volumes with the proposed mitigation measures in place, as well as the capacity analysis results from the original BRW study.

To give some perspective to the amount of the proposed casino-generated traffic, a comparison of contributing traffic at the four key intersections for the 2020 PM peak hour was calculated. This comparison is shown in Table 3. Table 3 indicates that casino traffic is expected to be only

10% to 27% of the traffic at the key intersections and that traffic from other new developments will be the major source of traffic increases at these intersections.

TRAFFIC IMPACTS AND POTENTIAL MITIGATION MEASURES

With the exception of the Carmichael Road/Crestview Drive intersection, it is anticipated that the key intersections and ramps reviewed in this study will operate at acceptable levels of service (LOS D or better), through the Year 2020, if the proposed casino is built. The Carmichael Road/Crestview Drive intersection appears to be the critical intersection along this section of Carmichael Road, and, with the casino in place, this intersection is expected to operate at LOS E in the Year 2020, if no improvements are made to the intersection.

Possible ways to mitigate the poor level of service at the Carmichael Road/Crestview Drive intersection are as follows:

- Adding a second left turn lane to the SB Carmichael Road approach, converting an existing thru/right lane to a right turn only lane on the WB Crestview Drive (Stageline Road) approach, and adding a second right turn only lane to the WB Crestview Drive (Stageline Road) approach will allow this intersection to operate at LOS D. It should be noted that the proposed mitigation measures are not needed immediately, even if the casino is built. The City may want to defer these improvements to see if the anticipated traffic generation from the Stageline Road area materializes. If the improvements are deferred, it is critical that sufficient right of way (ROW) be reserved for these improvements. It appears there is already sufficient ROW on Carmichael Road for the SB left turn lane. The City should require the dedication of additional ROW in the northeast corner of the Carmichael Road/Crestview Drive intersection, when the property in this corner develops.
- Once the new SH 35 and SH 35/Hanley Road (High Ridge Road) interchange is completed, the casino could place signing along I-94 to encourage visitors to use the SH 35/Hanley Road route to access the casino. The casino's advertising material could also indicate that this is the preferred route to the casino. Though these measures would not change the amount of casino traffic, they may divert some casino traffic away from the critical Carmichael Road/Crestview Drive intersection.
- As suggested in the 6/7/99 Bonestroo memorandum, a traffic study should be required for each development in the Stageline Road area as it is proposed to the City. It is difficult to forecast traffic 20 years into the future. These traffic studies will give the City a means of monitoring conditions along Carmichael Road as development occurs and can be used to determine the type and timing of needed roadway improvements.